

A NOTE ON THE ARIZONA ERORA (LEPIDOPTERA, LYCÆNIDÆ)

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In 1940, Mr. C. F. Dos Passos described a subspecies (*sanfordi*) of *Erora læta* Edwards, basing his description on specimens mainly from Arizona. A year later Mr. W. D. Field, in a detailed and lengthy discussion of the two forms, synonymized *sanfordi* in favor of *Erora quaderna* Hewitson, and pointed out that the two were not subspecies, but were worthy of full specific separation. Field, however, unfortunately acted without seeing any topotypical (or even approximately topotypical) *quaderna*, his concepts of that species being formed solely on Hewitson's descriptions and figures, and on the description of Godman & Salvin in the "Biologia." This has rendered incomplete and inaccurate what might have been a thorough and conclusive piece of work, and has made necessary the present paper.

Among a number of Lycænidae recently acquired by the Museum of Comparative Zoölogy are two females of what is apparently true *quaderna*. These specimens (data: Tancitaro, Michoacan, Mexico, 7800 feet, June 30, and July 8, 1941, resp.; H. Hoogstraal and R. Haag, collectors) coincide quite well with the descriptions and figures of Hewitson, and may be taken as typical. These, when compared with a number of Arizona "*quaderna*" showed that the name *sanfordi* is not to be synonymized, but rather retained for a valid race. The affinities of this Arizona subspecies are, however, with *quaderna* and not with *læta*, so the name must be transferred. These conclusions were kindly verified for me by Mr. F. W. Goodson, at the request of Dr. N. D. Riley. He examined the specimens in the British Museum collection and his report is quoted in part as follows:

"In the B. M. collection there are seven females of *læta* Edw., and five females of *quaderna* Hewitson. . . . The Rothschild collection contained a male from South Arizona (Poling)

and a female from the Huachuca Mts., Arizona (Oslar) which agree well with *læta sanfordi* dos Passos. *Læta* and *læta sanfordi* undoubtedly differ from *quaderna*. On the upperside the ground colour of *læta* and *sanfordi* is brown, in *quaderna* black; the blue of the former more restricted on both wings, and is more violet than *quaderna*. . . . The specimen described by Godman and Salvin is a female, not a male, and differs in the underside being much greener, but it is a very fresh specimen which may account for it."

Mr. Goodson, in another part of his report, even goes so far as to coincide with dos Passos in that *læta* and *sanfordi* are races together, specifically distinct from *quaderna*; but granting Field's drawings of male and female genitalia of both to be accurate (and they certainly appear so), such a conclusion cannot hold. There are too many profound differences which point to long isolation and full specific distinction between them. Furthermore, the patterns of *sanfordi* and *quaderna* are much more closely allied than those of *sanfordi* and *læta*.

There appears to be no known record of *quaderna* closer than a rough thousand miles to Arizona, all the known localities lying south of an imaginary line drawn from Tuxpan, on the Caribbean Sea, to Colima, near the Pacific Coast. This makes rather pointless one of Field's arguments for his synonymizing of *sanfordi* and *quaderna*. He says in the introduction of his paper (p. 303): "It seems less surprising, however, to find that this southwestern species is really a species found in nearby Mexico than a New England and eastern Canadian species not known to occur in any locality nearer than fifteen hundred miles distance."

The species concerned may be listed with the following synonymies:

***Erora læta* Edwards**

Thecla læta Edwards, 1862, Proc. Acad. Nat. Sci. Philadelphia, p. 50.

Thecla clothilde Edwards, 1863, Proc. Ent. Soc. Philadelphia, 2, p. 15.

Erora læta: Field, 1941, Annals Ent. Soc. America 34, p. 309, pl. 1, figs. 1, 2, 3, 7; pl. 2, figs. 1-4; pl. 3, figs. 9, 10.

To the localities given by Field may be added the following, based on a female in the Museum of Comparative Zoölogy: Lake St. Joseph, Portneuf County, Quebec (June 1932, G. B. Fairchild).

***Erora quaderna quaderna* Hewitson**

Thecla quaderna Hewitson, 1868, Deser. Lycænidaë, p. 35.

Thecla attalion Godman and Salvin, 1887, Biol. Centr.-Am., Lep. Rhop. 2, p. 60, pl. 35, figs. 19, 20.

Erora quaderna: Field, 1941, Annals Ent. Soc. America 34, p. 303, pl. 1, figs. 4, 5, 6, 8; pl. 2, figs. 5-8; pl. 3, figs. 11-13: (In part). (Figures all represent *sanfordi*, not *quaderna*.)

The type locality is here selected as Tancitaro, Michoacan, Mexico. The type female, with no accurate data, is in the British Museum. The only insight we have to the habits of this species are the notes on the two specimens in the M. C. Z. They read, respectively: "Resting on lupine at nightfall," and "Swept from mt. meadow."

***Erora quaderna sanfordi* dos Passos**

Erora lata: of authors.

Erora lata sanfordi dos Passos, 1940, Am. Mus. Novit. No. 1052, p. 1.

Erora quaderna: Field, 1941, Annals Ent. Soc. America 34, p. 303, pl. 1, figs. 4, 5, 6, 8; pl. 2, figs. 5-8; pl. 3, figs. 11-13.

Complete bibliographical references to all forms here discussed are to be found in Field's paper.